First detection of extended SiO toward a filamentary hub cluster NGC6334 V

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Stars form from sufficiently massive clumps of molecular gas in clusters deeply embedded in filamentary molecular clouds, but how these clumps of molecular gas and dust accrete from the filaments to the cluster and onto the cluster members remains unknown. We study the formation of massive protocluster NGC6334-V embedded in filamentary cloud NGC6334 and detect a unique widespread SiO emission in the filamentary hub. We used ALMA observations in the 1.3 mm to reveal small scale protocluster NGC6334-V in detail and compare our data on a large scale using APEX observational data. Our analysis towards both ALMA and APEX data traces filaments from large scale converging to the center of the protocluster where the hot core, main population mass condensations, and the complex shell-like structures of SiO are detected. This comparison proves observationally how observed filaments on small scale ALMA observations follow the same pattern as seen in large scale APEX observations and how the gas in large scale NGC6334 cloud falls into the small scale protocluster through distinctive converging flows. The remarkable presence of extended SiO reveals both narrow velocity components tracing slow shocks associated with core accretion and broad velocity components following high velocity shocks associated with the protostellar activity. Such narrow and broad spectrums could have a variety of origins and address diverse processes in the region. We are finding notable results and hope to publish our outcomes by the conference date.